

Robot Bounded in Circle [\(View\)](#)

On an infinite plane, a robot initially stands at $(0, 0)$ and faces north. The robot can receive one of three instructions:

- "G": go straight 1 unit;
- "L": turn 90 degrees to the left;
- "R": turn 90 degrees to the right.

The robot performs the instructions given in order, and repeats them forever.

Return `true` if and only if there exists a circle in the plane such that the robot never leaves the circle.

Example 1:

Input: instructions = "GLLGG"

Output: true

Explanation: The robot moves from $(0,0)$ to $(0,2)$, turns 180 degrees, and then returns to $(0,0)$.

When repeating these instructions, the robot remains in the circle of radius 2 centered at the origin.

Example 2:

Input: instructions = "GG"

Output: false

Explanation: The robot moves north indefinitely.

Example 3:

Input: instructions = "GL"

Output: true

Explanation: The robot moves from $(0, 0) \rightarrow (0, 1) \rightarrow (-1, 1) \rightarrow (-1, 0) \rightarrow (0, 0) \rightarrow \dots$

Constraints:

- `1 <= instructions.length <= 100`
- `instructions[i]` is 'G', 'L' or 'R'.